



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,080	02/04/2004	Katherine H. Guo	GUO 11-7-8	4523

46363 7590 06/19/2009
WALL & TONG, LLP/
ALCATEL-LUCENT USA INC.
595 SHREWSBURY AVENUE
SHREWSBURY, NJ 07702

EXAMINER

CHAMBERS, TANGELA T

ART UNIT	PAPER NUMBER
----------	--------------

2617

MAIL DATE	DELIVERY MODE
-----------	---------------

06/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/772,080	Applicant(s) GUO ET AL.	
	Examiner TANGELA T. CHAMBERS	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 11-22 is/are rejected.
- 7) ☒ Claim(s) 6-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment and arguments filed on 3/19/2009.
2. Claims 1-5, 11-15 and 21-22 are rejected.

Response to the Arguments

3. The applicant's arguments filed on 3/19/2009 have been fully considered, but they are not persuasive. In the Remarks, the applicant has argued in substance:

(1) The applicant argued features, i.e. selecting a subset of IPSGs to maximize total profit resulting from provisioning a subset of VPN customers on the selected IPSGs, wherein said total profit from all the customers comprises the sum of profits from each customer, where for each customer profit equals weighted revenue less cost, wherein said cost per customer comprises a total tunnel bandwidth cost from said MAP to said CPE, and a cost of provisioning an IPSG node.

Response:

- (1) The argued features read upon Lor in view of Zargham.

Lor discusses selecting IPSGs (WLAN switches) and provisioning customers on the selected IPSGs. Thus Lor shows the limitation of "selecting a subset of IPSGs to maximize total profit resulting from provisioning a subset of VPN customers on the selected IPSGs".

Lor discusses providing cheap multi-vendor support to VPN customers which would maximize profitability but did not specifically disclose certain computational relationships as taught in the instant application; therefore, Lor is modified with Zargham to show such computations were obvious in the art at the time the invention was made.

As a result, the argued features are shown by Lor as modified by Zargham.

Regarding the applicant's arguments within several of the dependencies, Lor discloses those limitations, or Lor as modified by secondary analogous art disclose those limitations.

(2) In response to the applicant's argument that the references are not combinable, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

(3) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the suggestion to combine the references was shown within the secondary references as cited in the motivation statements and can also be found within the background of the secondary references.

As a result, the argued features read upon the references as follows:

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2617

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 11-15 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lor et al, (Lor) (US Patent Publication No. 2004/0068668 A1), in view of Zargham et al (Zargham) (US Patent Publication No. 2003/0229613 A1).

As per claims 1-2, 11-12 and 22, Lor discloses:

- **identifying a set of virtual private network (VPN) customers**, (Lor, Abstract, Paragraphs [0010] and [0047]-[0049]), Lor teaches a client identifier to identify VPN users.
- **at least one mobile access point (MAP)**, (Lor, Abstract, Paragraphs [0031]-[0032] and [0062]), Lor teaches wireless access points.
- **at least one customer premise equipment (CPE) associated with each VPN customer**, (Lor, Paragraphs [0034] and [0099]-[0104]), Lor teaches equipment deployed in enterprise networks.
- **at least one IP service gateway (IPSG) for facilitating VPN tunneling between a MAP and a CPE**, (Lor, Fig. 2 and Paragraphs [0034], [0059] and [0062], "In the Wireless LAN environment, the corporate user can establish an extra virtual private network (VPN) tunnel between the wireless client and the corporate network.").
- **wherein each MAP is geographically remote from each IPSG**; (Lor, Fig. 1 and Fig. 8 and Paragraphs [0062] and [0094]-[0095], "Packets from the mobile client 803 are processed at the foreign agent 806, namely, the Enterprise WLAN Switch, through the AP2, 813 of the foreign subnet 805. The switch will encapsulate the actual upstream packet into an IP-in-IP packet, and send it to the home agent 802 through the tunnel."), Lor teaches a wireless access point remote from each IPSG (WLAN switch).
- **selecting a subset of IPSGs to maximize total profit resulting from provisioning a subset of VPN customers on the selected IPSGs**, (Lor, Paragraphs [0031], [0105]-[0106] and [0113]-[0117], "In centralized load balancing, the load balancing decision is made by a load balancing manager. This manager can be located

Art Unit: 2617

anywhere in the LAN; it may also be collocated with the WLAN switch.”), Lor teaches provisioning customers (load balancing) on selected IPSGs (WLAN switches).

Lor teaches providing cheap multi-vendor support which would inherently maximize profit [0104] but does not specifically disclose the following limitations. However, Zargham in an analogous art discloses:

- ***where for each customer profit equals weighted revenue less cost***, (Zargham, Paragraph [0015], “In particular, the present invention manages traffic, revenues, and costs, to help carriers maximize revenues, reduce network costs, optimize network routing, and increase overall profitability and service quality.”).
- ***wherein said total profit from all the customers comprises the sum of profits from each customer***, (Zargham, Paragraph [0015]), It would be obvious to one of ordinary skill in the art at the time the invention was made that the total profit from all customers would comprise the sum of profits from each customer.

wherein said cost per customer comprises:

- ***a total tunnel bandwidth cost from said MAP to said CPE***, (Zargham, Paragraphs [0007] and [0386], “[B]usiness intelligence data server 1704 includes analysis-ready data-marts to hold aggregate information on, for example, costs, revenues, traffic trends, bandwidth usage, and routing information.”).
- ***a cost of provisioning an IPSG node***, (Zargham, Paragraph [0049], “The optimization provided by this analytical method goes beyond the traditional least cost routing (LCR) to incorporate other business criteria, such as quality of service, profit margin, bilateral agreements, available capacity, network looping, inter-carrier looping, and minimum and maximum number of selected routes.”).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Zargham into the teaching of Lor to have customer profit equal weighted revenue less cost and have each cost per customer comprise a total tunnel bandwidth cost and a cost of provisioning an IPSG node. The modification would be obvious because one of ordinary skill in the art would

Art Unit: 2617

want the benefit of optimizing inter-network traffic which would lower costs and improve quality of service. (Zargham, Paragraphs [0014]).

As per claims 3 and 13, Lor further discloses:

- ***wherein said total tunnel bandwidth cost comprises a dynamic tunnel bandwidth cost between said MAP and said provisioned IPSG, and a static tunnel bandwidth cost between said provisioned IPSG and said CPE,*** (Lor, Paragraphs [0104] and [0115]-[0117], "To come up with a load switching decision, it examines the two types of parameters: static and dynamic parameters."), Lor teaches examining both static and dynamic tunnel bandwidths which would render a total tunnel bandwidth cost.

As per claims 4 and 14, Lor further discloses:

- ***wherein only a single tunnel is established between said provisioned IPSG and said CPE, even during instances where traffic from multiple MAPs are going through said provisioned IPSG to reach said CPE,*** (Lor, Paragraphs [0045] and [0094]-[0095], "The switch will encapsulate the actual upstream packet into an IP-in-IP packet, and send it to the home agent 802 through the tunnel."), Lor teaches a single tunnel being used to transmit traffic to the customer premise equipment.

As per claims 5 and 15, Zargham further discloses:

- ***wherein in an instance said provisioned IPSG sends traffic to more than one CPE, said provision cost is counted only once,*** (Zargham, Paragraphs [0085]-[0091] and [0194], "Using a routing method such as the embodiment described above, a network operator can facilitate collaboration between its routing and network provisioning teams, which can deliver the best possible quality of service and the lowest cost."), Zargham teaches provisioning costs including modifying routing changes. It would be obvious to one of ordinary skill in the art at the time the invention was made that the cost is counted only once.

Art Unit: 2617

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Zargham into the teaching of Lor to count provision cost only once when a provisioned IPSEG sends traffic to more than one CPE. The modification would be obvious because one of ordinary skill in the art would want the benefit of optimizing inter-network traffic which would lower costs and improve quality of service. (Zargham, Paragraphs [0014]).

As per claim 21, Lor further discloses:

- **wherein said MAPs provide dynamic switching and routing of data connections**, (Lor, Paragraphs [074]-[0076]), Lor teaches access points with switching and routing capabilities.
- **IPSEs provide VPN services**, (Lor, Paragraph [0031], "These switches, called Wireless LAN Switches, do not only perform Layer 2 switching, but also act as a wireless edge manager. They provide the additional functionalities like access control, firewall functions, traffic privacy and quality of service, network management, and load balancing.").

Allowable Subject Matter

5. Claims 6 and 16 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7-10, depend on claim 6 and contain the same allowable subject matter as claim 6. Claims 17-20, depend on claim 16 and contain the same allowable subject matter as claim 16.

Conclusion

6. The prior art not relied upon but considered pertinent to applicant's disclosure is made of record and listed on form PTO-892.

THIS ACTION IS MADE FINAL. See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANGELA T. CHAMBERS whose telephone number is 571-270-3168. The examiner can normally be reached Monday through Thursday, 9:00am-6:30pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro, can be reached at telephone number 571-272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tangela T. Chambers/
Patent Examiner, Art Unit 2617

Application/Control Number: 10/772,080

Page 9

Art Unit: 2617

June 17, 2009

/NICK CORSARO/

Supervisory Patent Examiner, Art Unit 2617